THE IMPACT OF WESTERN INDUSTRIALISM ON CHINA

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Seventh Morrison Lecture

The seventh annual Morrison Lecture was delivered at the Australian Institute of Anatomy to a distinguished audience on Tuesday, the 17th May, 1938.

Lord Huntingfield, the Administrator of the Commonwealth, with Lady Huntingfield, Lord Wakehurst, Governor of New South Wales, and a large party from Government House, Canberra, were present. The Consul-General for China, Dr. Pao, and Mrs. Pao, attended specially from Sydney.

Professor Aldred F. Barker, M.Sc., of Chiao-Tung University, was the Lecturer. He chose as his subject "The Impact of Western Industrialism on China".

The Lecture Theatre was completely filled some time before the Lecture, and extra seating accommodation had to he provided for late arrivals.

Lieut.-Colonel W.R. Hodgson, O.B.E., LL.B., Secretary of the Department of External Affairs, occupied the chair, he prefaced his introduction of Professor Barker with remarks on the importance of a good understanding being maintained between Australia and China.

Dr. L.H. Allen, Ph.D., M.A., of the Canberra University College, moved a vote of thanks to the Lecturer in a graceful speech which was seconded by Dr. Pao, Consul-General for China, and carried with acclamation by the audience.

Address

EAST AND WEST

The seer from the East was then in light,
The seer from the West was in the shade.

Ah! now 'tis changed. In conquering sunshine bright
The man of the bold West now comes array'd,
He of the Mystic East is touched with night.

—*Matthew Arnold.*

"No fruitful external action is possible except as the expression of an inward peace between thoughtful minds."

—*Etienne Gilson.*

One has only to read the six Morrison Lectures which have already been delivered to realize that a great tradition has been established. Bearing in mind the objects of the foundation, I cannot help asking myself why I, a Yorkshireman, should be honoured by being invited to give the seventh lecture. One answer, of course, is that Captain Cook was a Yorkshireman; and I plead guilty to not being able to go near Captain Cook's cottage in Melbourne without feeling a positive thrill—I am in my own land, with my own people again. But Australia has a more significant association with Yorkshire than this. From about 1804 onwards Australian wool-growing and Yorkshire wool-manfacturing went together hand in hand, and the wool industry of the world to-day is based on this association. My own first personal link with Australia, however, came when your Government invited me, along with my friend and colleague, Professor Cossar Ewart, of Edinburgh University, to attend the Pan-Pacific Science Congress held in Melbourne and Sydney in 1923. Curiously enough this link was also destined to be the link with China: for on taking up my duties as Professor of Textile Industries at Chiao-Tung University in 1933 I remembered the report I had prepared for the Victorian Government in 1923. I wrote asking for a copy of this report and permission to use it in the interests of China. Not only was permission given, but the report, which I am afraid had been "pigeon-holed", was rooted out, printed, and copies forwarded to the Chinese Government. Need I comment on the favorable impression created by this kindly act. The immediate result was the institution in Chiao-Tung University of a Textile School, which an Australian visitor, with trade connexions in China, recently declared in Sydney to be vastly superior even in its initial stages to anything which Australia as yet possesses!

Notwithstanding this useful association of our three countries, my position as a Morrison lecturer would still be in doubt but for a statement conveyed in the fourth lecture by Dr. W.P. Chen. He states that "It is the

opinion of the founders of the lectureship that cultural knowledge must accompany trade, if it does not actually precede it". I need not, therefore, excuse myself as a mere technologist. But I would go further than this and claim that even the mundane things of this world inevitably are "the way of life" for the bulk of our people, and that through the things of earth our people give expression to what they really are—to such culture as they possess or are developing. In the days that are passed this culture was a by no means to be despised possession, and it is perhaps true to say that to-day we are endeavouring to get back into our mundane industrial life that living culture in which the days of the hand industries were so rich, and Australia, to be followed later, we hope, by China, already bids fair to rival that wonderful industrial culture, the relics of which are the wonder of those, for example, visiting the Netherlands—Brussels, Antwerp, Bruges, and many other cities. You in Australia have your Art Galleries and your developing school of Australian painting; your cathedrals with their unique exposition of architecture and music; your literary societies developing a no mean literary appreciation. You, as yet, may not have all the cultural advantages of the Home Land, but you are surely making good progress.

At this stage I would ask, "What was the Home Land industrial evolution which carried Australia along with it, and what was its cultural significance?" And even more particularly I would ask, "How does the Home Land evolution of the past link up with the Chinese evolution of the present, and how may it link up with the future?" To answer these questions is going to involve me in at least a brief account of the development of Western industrialism: and it is perhaps well that this should be so, for a very similar development is taking place in China to-day, with the exception that what took the West 100 years to pass through, China will be through in a decade. And here I would say a word about my method of presentation.

It is recorded of a well-known Lord Chancellor that he was accustomed to read himself to sleep with romance, and that his favourite romance was Macaulay's History of England. Now it is very easy to romance about the evolution of the industrial system in Great Britain—how shall we adjudicate, for example, between Mrs. Browning, who wrote "The Cry of the children"—

Do ye hear the children weeping, O my brothers,
Ere the sorrow comes with years?
They are leaning their young heads against their mothers,
And THAT cannot stop their tears.
The young lambs are bleating in the meadows,
The young birds are chirping in the nest,
The young fawns are playing with the shadows,
The young flowers are blowing towards the west—

But the young, young children, O my brothers,
They are weeping bitterly!
They are weeping in the playtime of the others,
In the country of the free.

and John Bright, who considered that the sacrifice of the children in the interests of the Empire was amply justified. If I were at Home and could consult the many technical books in my own library on this matter, I should probably give you an explanation following my favourite writer and coloured by his particular outlook. As it happens, however, I cannot do this, so I must rely upon two things—my own family traditions (my grandfather and his father before him were connected with the textile industries) and my own personal experiences which date back to the 70's and tapped the experiences of men going back into the eighteenth century. This mode of presentation will probably find favour with my Chinese friends, who still hold strongly to family ties.

I want, then, in the first place, to reconstruct the outlook of the pre-industrial era; and fortunately I can do this with an almost lightning pen-sketch—

Farmer at the plough,
Wife milking cow,
Sons threshing in the barn,
Daughters all a-spinning yarn,
Happy as the day is long.

In America one would have to add to this the "itinerant weaver" who, during the summer, travelling from place to place, wove up the yarn spun during the winter months and who, in his turn, may well be suspected of spinning yarns of another kind. At Home the Village Fair, as described, for example, in "Tom Brown's School Days", served as the news vendor along with certain wanderers and news carriers to be found in every English rural community. And it may well be imagined that year by year, generation by generation, this non-changing country life was followed. But there were periods of hard times, of prosperous times and of a return to hard times. Thomas Hardy sketches a complete circle of such in his "Mayor of Casterbridge", and I can match it in my own family; for my grandfather passed as a young man through a period of tramping the roads in search of work, to being the prospective proprietor of a stately country mansion, and back to penury in his old age, when he had lost everything, and yet could say "The Lord gave and the Lord hath taken away; blessed be the name of the Lord". And just as individuals experienced these vicissitudes of fortune so did whole districts. The eastern counties of England, for example, still possess the cathedral-like parish churches dating back to a wonderfully prosperous wool-manufacturing industry, probably introduced by continental refugees; and the county of Somerset is studded with beautiful perpendicular (15th century) church

towers which undoubtedly betoken a period of extraordinary prosperity. Possibly the references still made to "Merrie England" date back to the 13th century, which, for some reason or other seems to have been the climax of a delightful country life. But geographically and vocationally there seem at all times to have been remarkable differences. The dour, stormy east coast of England necessitated such "hard living" for the fisherman that Charles Kingsley wrote of it in his "Three Fishers"—

For men must work and women must weep.
And the sooner 'tis over and the sooner to sleep.

while Scott and Ruskin, writing of the more pleasurable aspects of the inland districts with which we are more intimately concerned, give a very different picture—

Twist ye, twine ye! even so,
Mingle shades of joy and woe,
Hope, and fear, and peace and strife,
In the thread of human life.

While the mystic twist is spinning,
While the infant's life beginning,
Dimly seen through twilight bending,
Lo, what varied shapes attending!

. . . . .

Now they wax, and now they dwindle,
Whirling with the whirling spindle.
Twist ye, twine ye! even so,
Mingle human bliss and woe.

And here we must not overlook Nature's seasonable periodicities. Shelley, in his "Ode to the West Wind", wrote—

O Wild West Wind, thou breath of Autumn's being,
Thou, from whose unseen presence the leaves dead
Are driven, like ghosts from an enchanter fleeing,

Yellow, and black, and pale and hectic red,
Pestilence-stricken multitudes: O thou
Who Chariotest to their dark wintry bed

The winged seeds, where they lie cold and low.
Each like a corpse within its grave, until
Thine Azure sister of the Spring shall blow.

while Robert Browning wrote—

Oh! to be in England now that April's here!

But there is another periodicity—an artificially-produced periodicity—which also must be taken into account, viz., the weekly periodicity necessitating the break at the week-end and giving the impetus of a new start every Monday morning, the importance of which cannot be realized until one becomes conscious of its lack, and the results of this lack, in the

Far East. When we come to glance over the corresponding conditions in China all these matters will be found to have an important bearing upon our investigations and upon the deductions to be made.

It would almost seem that the rise of the industrial system is to be attributed to the necessity of the Home Country making due provision in the way of clothing for its sons moving far afield—the explorers. Thus Wales developed a wonderful woollen industry, which followed the vicissitudes of fortune of the early American colonists: this has only just disappeared as such. In another way, but equally through our explorers, our cotton industry was brought to us from the East, and ultimately linked up with American cotton growing. These industries, however, at their inception, were essentially organized hand industries; and this is clearly illustrated in Hogarth's "Industrious and Idle Apprentice", in which hand loom weaving is basic to the study. All the London companies—the Weavers, the Clothworkers, &c.—which to-day have lost their *raison d'etre* so far as London is concerned, were based upon the hand industries. These companies to-day are using such wealth as they possess to further the development of educational institutions, such as the Textile Industries Department of the University of Leeds which has been handsomely endowed by the Worshipful Company of Clothworkers.

The breaking away from the purely hand processes came with the application of water power. Thus to this day the "felting" of wool fabrics is referred to as "milling", the action of the human feet in felting wool cloth by "treading" being first imitated in the water mill. Carding was the next process delivered up to the mill, this, no doubt, being due to the circular nature of the necessary movements. Arkwright's adaptation of the Saxony wheel spindle—by the way, essentially perfected by Leonardo di Vinci—being also of a similar nature, was next on the list; and mule spinning, in which were involved some complex reciprocating movements, was the last important textile process to pass into the domain of the mechanical. The power loom was slower in being adopted by the industry because while the product of the spinner was multiplied some six hundred times by the adoption of mechanical means, that of the weaver was barely increased four times; and, as we shall see when we study Chinese hand weaving, in some cases the advantage still remains with the hand loom.

Of course a dominant factor in the evolution of the mechanical era was the steam engine and the consequent call upon the coal fields of the country. A most interesting account of the introduction of the steam engine into the wool industry is given in that old English classic *John Halifax: Gentleman.*

Of the results which followed from this mechanization of industry I would give you two distinct views. Lascelles Abercrombie writes—

"And shall there be no end to life's expense,
In mills and yards and factories,
With no more recompense
Than sleep in warrens and low styes,
And undelighted food?
Shall still our ravenous and unhandsome mood
Make men poor and keep them poor?—
Either to starve or work in deadly shops
Where the damn'd wisdom of the wheels
Fearfully fascinates men's wits and steals,
With privy embezzlement that never stops,
The worker's conscience into their spinning roar,—
Until men are the dead stuff there,
And the engines are aware?
Shall we not think of beauty any more
In our activities?
Or do no better than to God complain?—
I would that to the world would come again
That indignation, that anger of the Lord.
Which was known among us men.

O for that anger in the hands
Of Spirit! To us, O righteous sword
Come thou and clear our lands,
O fire, O indignation of the Lord!"

Thus writes Lascelles Abercrombie. But now listen to Rupert Brooke. He writes of—

"The keen, unpassioned beauty, of a great machine".

And whether we like it or not it is obvious that the machine has come to stay: in fact it is the evolution of the "mechanized" industries with reference to both ourselves and China that must be our special study.

Given the machine and an enormously increased output it is the organization of industry that next claims attention. In the early cottage industries it was usual to find every process carried on under one roof. I still carry a mind-picture, for example, of a Welsh cottage with a bag of wool, hand-cards, a spinning jenny, and a hand-loom in the corner. Then came a period when certain processes were done away from home and finally in the fully mechanized industry a re-uniting of the processes under one roof, this being the modern woollen mill. The cotton industry, however, being practically a "machine-created industry" developed from the first on such a big scale that subdivision of the industry was almost essential even from the financial point of view. This subdividing, along with that in the correspondingly developed worsted industry, naturally followed the lines of demarkation incident upon mechanical treatment. Thus in the worsted industry of to-day the divi-

sions are—wool washing and combing for the production of the "top"; wool spinning and twisting for the production of yarns; weaving for the production of cloth and dyeing and finishing. But so exacting are the modern conditions of industry that even spinning is subdivided and we have Botany or Merino, Crossbred and English and Mohair spinners. And in the cotton industry one of the most important divisions is that of "the Fine Spinners and Doublers".

In the wool industry a further development of organization took place towards the end of the last century when the Bradford dyers and finishers organized themselves into the "Bradford Dyers' Association", combining practically all the works engaged on these processes and organizing its own experimental and research laboratories and gaining most or all of the advantages supposed to appertain to such an organization. The same method of organization quickly spread to the combers and to-day practically every section of both the wool and cotton industries has a corresponding central organization. As to whether the vertical or horizontal forms of mill organization shall be employed is dependent upon the scale of the particular industry. In large scale industries there is sectionalizing from the financial point of view: in fancy businesses necessitating a large amount of individual attention, as for example in the production of fancy woollens and worsteds, the industry is severely sectionalized to both financial and artistic advantage.

Now all the foregoing is quite distinct from what is termed the rationalization of industry. Rationalization is a direct result of overproduction, but is frequently mixed up with mill organization, and corporate buying and selling. We may safely dismiss this here in our consideration, for many years must elapse before China will be "saturated" with reference to either cotton or wool goods.

I now come to the part of my lecture which will interest my audience the most, viz., the consideration of the corresponding periods in the evolution of Chinese industries, and particularly of the textile industry, the one upon which I am specially competent to speak. And at once an important difference faces us. The English textile industries were primarily concerned with the production of clothing for the masses—with the simplest and most speedy forms of hand, and subsequently, power production. Some few important exceptions to this are to be noted. The silk weavers of Spitalfields, the Huguenot weavers of Canterbury, the Flemish carpet weavers of Wilton in the South-West of England, the shawl weavers of Norwich, and of Paisley in Scotland, and the Yorkshire (Huddersfield) fancy waistcoat manufacturers should, perhaps, be specially mentioned. Some of you will remember that Thackeray in his essay on "The Four Georges" writes that with reference to George, Prince Regent, he has never been able to find anything but "waistcoat";

and this is useful testimony to the efficiency and artistic ability of the Huddersfield manufacturers of that period.

When we turn to China, we at once become involved in the silk industry, and as silk is invariably associated with the most elaborate productions desired by a country's elite, we at once become merged in a wealth of design in form, colour and texture. Among the fabrics which one can still come across almost in profusion in China are specialty to be noted elaborate dress fabrics following prescribed formal lines, more ordinary but equally beautiful fabrics for both men and women, tapestry hangings of superb beauty in form, colour and texture, and rugs and carpets for which Peking is specially noted.

The early forms of Chinese design go back to hand embroideries, and to the beautiful hand tapestry of a pictorial type known as the "K'o Ssu". And here, I must admit, a "lack" so far as I personally am concerned. I know something of the traditions of the art and literature of my own land, but little of the corresponding traditions of China. There is, however, one matter of supreme importance and interest which applies equally to both Chinese art and literature; and this may best be illustrated by a musical analogy. If we take as an example one of J.S. Bach's "Inventions for Three Voices" we have a theme first given in its simplest form by each voice in its turn, with the other voices acting as an accompaniment; then an ingenious and usually beautiful mixing up of the theme between the three voices; and finally a climatic rendering of the main theme in all its elaboration. Now, Myra Hesse in playing such an "invention" clearly and distinctly brings out the theme which each voice may be singing, and in some of the most complex the right hand is answered by the left hand, and a wonderful interplay of parts is brought out. Now all this is totally at variance with Chinese principles. The Chinese artist, be he painter, or musician or poet, deliberately leaves out the emphasis, he leaves something for the observer to do—he sketches a field, a wonderland, in which he expects the wanderer to pick out the jewels lying at his feet. Here we have subjective as distinct from objective art. Thus the early K'o Ssu and embroidered fabrics, even if of no particular symbolic significance, are full of interest to those who have the subjective capacity to integrate along right lines. Dragons, phoenix, lions, dogs, bats, flowers, endless knots, State umbrellas, &c., &c., present a medley of form and pattern truly most interesting to those who have the knowledge leading to almost invariably a fascinating interpretation. It was possibly the perfect freedom in rendering of the oldest Chinese fabrics which made possible the wonderful decorative designs which are basic to the best collections of Chinese art. The only corresponding Western example is the Bayeux tapestry worked by Queen Matilda, wife of William the Conqueror and her ladies, about

A.D. 1100. This, curious to relate, is in no sense a "tapestry": it is embroidery, or perhaps to be more exact, one should classify it as "needlework". It is essentially pictorial, depicting combats between Norman and Saxon, buildings of the period, customs, &c. One can, of course, match it with many Chinese examples much older and much more elaborate.

It was probably in the sixteenth century that the first remarkable impact of the West upon the East took place. The civilizations of the Mediterranean Sea, and more particularly that of Italy, called for elaborate patterns for great noblemen and for State functions. It is thus probable that, as my son was the first to state before the Art Club of Shanghai, the "draw loom" was evolved in Southern Europe, and not in China, and was carried into the East by European travellers, of whom Marco Polo may be cited as a very early example. With this mechanism the skilled designers of China evolved perhaps the most gorgeous design the world have ever known. In fact, so wonderful are the possibilities of both K'o Ssu tapestry weaving and the draw loom that even to-day the most beautiful Chinese patterns are thus produced.

Only a few weeks before leaving China, incident upon the present hostilities, my son and I agreed that we must recommend to the Chinese authorities the development of a Central Museum where the wonders of these entrancing forms of pattern production could be preserved and shown to visitors to China. With this object in view, one Saturday afternoon last July found us motoring along the road which leads out of Shanghai towards Soochow. A 50-mile run brought us to a shady creek where we left the car and proceeded on foot through many interesting farmsteads until we arrived at our destination—a group of small farm houses where K'o Ssu weaving was still practised. Here we were almost joyfully received—for the craftsman is invariably attracted by any one who is interested in his craft—and the wonders of this form of pictorial weaving were demonstrated to us on the comparatively simple mechanism employed. Then nothing would suffice but that we should stay and take tea with our entertainers, and finally in the light of the setting sun we took to a boat and meandered along the picturesque creeks, and were at last landed close to our motor car. A delightful run in the gathering twilight eventually brought us to Soochow, where we put up for the night. Next morning, within the shadow of the Great Pagoda, we watched the production of some of the most gorgeous patterns I have ever seen produced on the draw or, indeed, on any loom: a man seated up above drawing the harness of each "shoot" of the shuttle inserted by the man sitting below. Much as the whole world is indebted to Jacquard for the invention of his loom which wiped out the draw-loom from the West, one could not but regret this disappearance in the light of what China is still producing on this mechanism.

To-day, all over the old textile districts of China, the old is giving way to the new: the impact of the West is bringing China into line with the rest of the world, and within a measurable distance all the superlative productions of the Chinese primitive weaving mechanisms will be a thing of the past. Curious to relate the impact of the West on China has come so late that certain stages which the West has gone through are here missing. Thus China has never had the "coarse pitch" Jacquard, but has gone straight away to a Jacquard of the Verdol type of "medium" or "fine" pitch. Upon these mechanized weaving implements China is now successfully developing a silk trade along modern lines.

Unfortunately, with reference to another branch of the industry, she has not been so successful. Round the capital city of Nanking there has been developed a wonderful silk velvet industry employing, possibly, thousand of workers in the production of fabrics which even to-day, possibly, are not equalled by the fabrics produced on the modern power loom. But the double-pile on velvet loom, perfected in Bradford by the late Lord Masham and Mr. Rixache, is now completely wiping out these skilled artisans, and, unfortunately, no one seems to have visualized the possibility of introducing the double-pile or velvet power loom—a loom not really difficult to manage—into Nanking. Here our brief survey of China's magnificent silk industry must end—we must turn to the more prosaic industry based upon the clothing of the teeming masses of China's population, and study the effects of the impact of the West on this.

The three materials upon which China has always been able to rely for normal clothing are silk, wool and cotton. The first of these fibres—silk—is still used for normal clothing in two forms, viz., as "thrown" or "spun" thread, and as "waste" silk fibre which is made into a special form of wadding for lining the coats of the better class of people during the colder months of the year. The impact of the West has here also probably made itself felt, for Lord Masham's discovery of how to spin waste silk into a serviceable thread must seriously have affected the silk wadding industry by consuming silk waste. It is probable, however, that at no time was there more than a small proportion of the population—summer or winter—dressed even in ordinary silk fabrics.

In Manchuria and the West of China the sheep has always been in evidence, and it is probable that from time immemorial the people have clothed themselves either in the skins of the animals, or in felted wool or in cloth woven from spun wool. It is probable that the two forms of hand spinning wheels were known to these people, but that they were ever as clever at spinning as the people of Kashmir who spin Pashmina (the under coat of the Ibex) on the simple spindle wheel to something like 100's count worsted, is very unlikely. And this is borne out by later evidence,

it having quite recently been reported that when some success attended the introduction of fine merino sheep onto the coarser stock of the Mongolians they found the finer fibre produced so much more difficult to spin, as compared with the coarse fibre, that they threw it away or sold it for about ld. per lb. Thus it may be taken that the people of the colder parts of the Chinese Empire clothed themselves in both coarse woven wool fabrics and in a felt made, without thread structure, of fibres only, the art of making which is still known and practised throughout Central Asia. Curious to relate the simple method of making "felt" by machinery practised in the West does not seem to have made its impact up to the present on China.

It is usual to suppose that wool is the only fibre which will "felt". But to-day the poorer people in the Yangtze Valley in winter are clothed in spun and woven cotton fabrics lined with a cotton felt usually spoken of as "wadding". It was in the spinning, weaving and finishing of ordinary cotton fabrics that the impact of the West really first made itself felt. We have already noted that the cotton industry of Lancashire was practically a machine created industry, and it was but natural that the Lancashire machinists, having perfected their machines, should look further afield for the disposal of these machines. Thus India, China and Japan naturally claimed attention, and to-day these three countries have very analogous cotton industries all taking their rise in Lancashire cotton machinery and all to this day principally sustained by Lancashire machinery. Thus it came about that in China the impact of the West so far as cotton manufacturing was concerned took the form of four English cotton mills, which are still among the best in China. Two factors now come into play which have had considerable influence on the development of the cotton industry in China, viz., the fact that the Island Empire of Japan was earlier in the field than the land girt Empire of China, and the difference between the Oriental rate of pay and rate of pay of the West. Thus to-day about half the Chinese cotton industry is controlled by the Japanese and the other half by the Chinese, and in both cases the over-head charges are much less than in the English mills. I have had the privilege of inspecting one of the Japanese mills and nearly all the Chinese mills. There is little to choose between the standard of efficiency in the best Japanese and Chinese controlled mills, but it may safely be stated that in China there was no better organized mill than the Chinese Wing On No. 2—and I deliberately state this after having made two careful inspections of this mill. Then a thing which pleased me very much about the Chinese factories and their managers was this: On paying a second visit to these factories some twelve or eighteen months after my first visit I found that nearly all the matters with which I had found fault on the occasion of my first visit had been rectified. Although Chiao-Tung University published a lengthy

report on our visits, I gradually came to realize that the Chinese manager was very capable of taking a suggestion and acting upon it. As a matter of fact, I was delighted with the practical and yet almost altruistic outlook of certain of the Chinese managers, and I felt then and have since frequently expressed the opinion that if the prospective Chinese manager were given the same educational chances as the managers of other nationalities, he would by no means be the least efficient.

And here you may be interested in a few details of the organization of Wing On No. 2 Mill, as typical of a Chinese mill. One notices at once the absence of "bale conveyors" from the junks in the creek into the factory. Coolies with their bamboo poles do this carrying, singing as they laboriously progress. This is a concession to the Chinese desire to pull or carry something—for "pulling" or "carrying" the Chinaman is happy. Inside the mill the conditions are similar to those prevailing in Lancashire—the machinery all being Lancashire made. The rooms and sheds are light and airy, and even towards the end of a twelve-hour day the workers still seem happy and interested. One notices at once that the workers in such a mill as this adopt the accepted uniform—they are dressed in black cotton sateen, and, as they are women, of course, wear trousers—not skirts or robes.

If we follow these workers out at the end of the day we shall find that for those who have far to go there are wheel-barrows waiting—wheel-barrows on which ten workers sitting back to back, as on an Irish jaunting car, are wheeled easily by one man.

The wages paid seem small, but in purchasing power amount to about 12s. to 16s. a week for girls, and double that amount for older and more responsible women. These wages are probably at least as good as those paid in England about 30 years ago. For men labourers they are at about the same rate. These, however, are the wages paid in an up-to-date mill. In industries other than the "textile", where the West has not made its impression, fearful conditions have prevailed, young people being "used up" and then sent into the country to die, there being plenty of others to take their place.

And here I would pay tribute to an Australian lady, Miss Hinder, who has done wonderful work in the interests of the Chinese workers.

In the country mills, excellent arrangements are made to thoroughly train the young girls entering the mill, a uniform is adopted, dormitories are provided and attention paid to the physical and moral well-being of all the workers. With the prospective reduction of hours of work from twelve to nine per day the life of the Chinese textile worker will be almost enviable.

It is very difficult to arrive at just decisions so far as the agricultural worker is concerned. My own opinion is that the standard of living among these people is very low—even lower than that prevailing in India. And I am confirmed in this by Mr. Strickland, recently sent out to China from Oxford. He states that the Chinese farmer is too poor to get into debt!

But China is now developing a wonderful road system—famines are going to be a thing of the past, and the farmer is going to be able to dispose of his produce most advantageously. Then will his purchasing power markedly develop and a much greater demand on the secondary industries follow. And this will bring with it a vastly increased demand, among other things, for Australian wool.

And now a word with reference to the more recent attempts to evolve a well-organized wool industry for China. This industry, for reasons which can readily be determined, developed little until about 1933. Machinery which up to then had languished in employment, or perchance was actually out of employment, became active; Chinese people started to wear more wool, and those on the lookout for industrial developments realized that the coming thing was the wool industry. Attempts made to associate Australia with China in this development having languished, the Chinese people themselves determined to go forward, and some large schemes were in process of being realized just as the war broke out. Thus should the Chinese be left free to pursue their own line of development and associate themselves with the Australian wool-growers, it may safely be stated that on the cessation of hostilities there will be very marked developments in wool-manufacturing in China, these probably centering round Shanghai, with some few firms producing specialities at Tientsin and possibly Peking. It is probable that in the near future China will become one of the wool-manufacturing and wool-consuming countries in the world. Australia will do well to specially note this. Why the "wear wool advocates" should post off to Europe, a continent already well versed in the use of wool, and neglect the much more promising ground near home, passes the normal man's apprehension.

Before summing up the effects of the impact of the industrial West on China, it may be well to ask the question: "What does the industrial West stand for?" Let us review each of the important answers which may be given to this question. But before doing so let us consider for a moment what life---even industrial life—should mean to us. And do not let us be put off with such a platitude as "the greatest happiness to the greatest number"; for this means nothing, gets us nowhere. Let us rather ask, "What are the satisfactions of life, and how may we fashion our lives to bring these satisfactions into play?" And this ques-

tion may well be answered by bringing up for review the possible satisfactions in the case of the normal industrial life. The first satisfaction coming up for review is the satisfaction of "money making". And far be it from us to deride or even ignore the economics of our problem. But search deeply, and you will find that this is a very unsatisfying pursuit, in itself savouring of deadness and fundamentally only to be regarded as a means to an end. Then what about the satisfaction of efficiency, of clear-cut efficient management? Look deeply into life and you will find that this may not be as dead as mere money-making, but even this cannot be described as other than a "living death". Next we encounter the satisfaction of the scientist in explaining the "how", and in some cases the "why", of his job. Can anything, for example, be more satisfying than the researches conducted in the department of the Leeds University over which I had the privilege of presiding, by Dr. Speakman, on the porosity of the wool fibre and the relative sizes of the dye molecules with which it is desired to impregnate the fibre; or the researches of Dr. W.T. Astbury on the wool molecule—possibly leading up to the "gene" of biologists—and its influence in determining the effects of many of the processes through which wool is passed? But perhaps the best examples of this type of satisfaction is the airman trying out his new machine and bomb, his intoxication being measured in terms of human life and suffering and the destruction of the achievements of men so much his superiors in everything but destructiveness. Can humanity rise superior to this satisfaction? Upon the answer to this question depends the immediate future of our civilization. The satisfactions of control and knowledge, enticing as they are, in the long run leave the human soul impoverished—and often with a self-knowledge of the lack of something greater and more fundamental than money, control or knowledge. It is recorded of a lady that on looking at one of Turner's landscapes in the presence of the artist, she turned to him and said, "But, Mr. Turner, I cannot see all these wonderful colours, which you have put into your picture, in the actual landscape". "Don't you wish you could, Madame?" was his reply. And this, of course, brings us to the beauty in the world which, in its several aspects, so outweights all other satisfactions that there are no terms in which it can be measured. Physical science, leading to control and knowledge, is basic to our modern education—it is a phase through which we have to pass; but the intuitive faculties which respond to goodness, beauty and truth are conspicuous by their absence in the world's present-day educational systems; yet, until they take their rightful place the whole world is in the state of "perishing everlastingly". Thus, while most of my colleagues at Leeds University would agree that the best work I had done was to support and invigorate such researches as those referred to in the foregoing,

just about three members of the University staff knew that my department stood for something bigger and more fundamental in life, which cannot be put into words to bring it within the apprehension of those who have not the capacity to respond, but which Keats came nearest to demonstrating when he wrote—

Beauty is truth, truth Beauty;—that is all
Ye know on earth, and all ye need to know.

And it has been a great satisfaction to me that my four years' residence in China has enabled me to make a collection representative of the beauty revealing itself through Chinese textiles, and, further, to know that this collection was the chief feature at the opening ceremony last autumn at Leeds University, and that it drew a larger number of visitors than ever before.

Now it is this inner, deeper response of human nature which I am endeavouring to demonstrate that China stands for; and when I am asked, "What is going to be the response of China to the impact of Western industrialism?" I am disposed to think not only of what the West can give to China, but of how China may remodel and change the whole outlook of modern life through bringing to bear upon Western industrialism its own outlook on life—which is so different from that of the West. And I can, perhaps, bring into my own and into your consciousness what this may mean by recalling Matthew Arnold's wonderful presentation—which seems to me to be the embodiment of what China stands for—in his sonnet on "Quiet Work"—

One lesson, Nature, let me learn of thee,
One lesson which in every wind is blown,
One lesson of two duties kept at one
Though the loud world proclaim their enmity.
Of toil unsever'd from tranquility!
Of labour, that in lasting fruit outgrows
Far noisier schemes, accomplished in repose,
TOO GREAT FOR HASTE, TOO HIGH FOR RIVALRY.

Thus in the days ahead of us I can well imagine China conserving all that is best in its own experience, taking also the best-conserved experience of the West, and integrating the two into an industrial efficiency which may be both a means of satisfactory livelihood and "a way of life". But the relationships of East and West will not be satisfactorily developed and conserved without taking into account China as potentially a great industrial country—in fact, one of the greatest the world has seen. The Boy Scouts and Girl Guides, who are to-day facing clear-eyed and undismayed the present awful conditions of warfare, will be the men and women of the New China. And we may be sure of one thing—they will face the industrial conditions of the future as clear-eyed and undismayed as they are facing to-day Japanese death-dealing bombs. And it

behoves the Western nations, and especially Australia, to take note of the New China at its birth, and with no uncertain gesture, when the time comes, to hold out the helping hand.

Mr. Chairman, I feel that I cannot bring my lecture to a close without paying tribute to Dr. Morrison, in whose honour this lecture is yearly delivered. Through his connexion with the *Times*, Dr. Morrison was able to play a useful part in keeping China and the welfare of China before the British public, and through his position as adviser to the Chinese Government he has helped well and truly to lay the foundations for the future relationships of Australia and China.

Then we have to lament the absence, through ill health, of Sir Colin MacKenzie, under whose inspiration these lectures were inaugurated, following the support given to his scheme by the Chinese residents in Australia.

Would not these two pioneers and their supporters, if they were with us to-day, rejoice in the knowledge that through their endeavours, year by year, an impetus is given towards uniting Australia and China, not only in their own individual interests, but also in the interests of world service?

"Myself and one of two lions at my entrance"; Morrison outside his house in Wangfu Jing